Chemical, Biological, Radiological, and Nuclear Countermeasures

The knowledge, technology, and material needed to build weapons of mass destruction are spreading inexorably. If our enemies acquire these weapons and the means to deliver them, they will use them potentially with consequences far more devastating than those we suffered on September 11.

The Department of Homeland Security would lead the federal government's efforts in preparing for and responding to the full range of terrorist threats involving weapons of mass destruction. To do this, the Department would set national policy and establish guidelines for state and local governments. It would direct exercises and drills for federal, state, and local chemical, biological, radiological, and nuclear (CBRN) response teams and plans. The result of this effort would be to consolidate and synchronize the disparate efforts of multiple federal agencies currently scattered across several departments. This would create a single office whose primary mission is the critical task of protecting the United States from catastrophic terrorism.

The Department would be responsible for several distinct capabilities and institutions that focus on specific elements of this mission. The Department would unify much of the federal government's efforts to develop and implement scientific and technological countermeasures to CBRN terrorist threats. The Department would also provide direction and establish priorities for national research and development, for related tests and evaluations, and for the development and procurement of new technology and equipment to counter the CBRN threat. The Department would incorporate and focus the intellectual energy and extensive capacity of several important scientific institutions, including Lawrence Livermore National Laboratory (currently part of the Department of Energy) and the Plum Island Animal Disease Center (Department of Agriculture).

The Department would unify our defenses against human, animal, and plant diseases that could be used as terrorist weapons. The Department would sponsor outside research, development, and testing to invent new vaccines, antidotes, diagnostics, and therapies against biological and chemical warfare agents; to recognize, identify, and confirm the occurrence of an attack; and to minimize the morbidity and mortality caused by any biological or chemical agent.

The Department would unify our defenses against agricultural terrorism – the malicious use of plant or animal pathogens to cause disease in the agricultural sector. The Department would exclude agricultural pests and diseases at the border. It would strengthen national research programs and surveillance systems to shield agriculture from natural or deliberately induced pests or disease. Working with the Department of Agriculture and the Department of Health and Human Services, it would also that ensure rigorous inspection and quality assurance programs protect the food supply from farm to fork.

Science & Technology Agenda. In the war against terrorism, America's vast science and technology base provides us with a key advantage. The Department would press this advantage with a national research and development enterprise for homeland security comparable in emphasis and scope to that which has supported the national security community for more than fifty years. This is appropriate, given the scale of the mission and the catastrophic potential of the threat. Many of the needed systems would be potentially continental in scope, and thus the technologies must scale appropriately, in terms of complexity, operation, and sustainability.

This research and development would be driven by a constant examination of the nation's vulnerabilities, constant testing of our security systems, and a constant evaluation of the threat and its weaknesses. The emphasis within this enterprise would be on catastrophic terrorism – threats to the security of our homeland that would result in large-scale loss of life and major economic impact. It would be aimed at both evolutionary improvements to current capabilities as well as the development of revolutionary new capabilities.

The following are examples of the types of research and development projects that the Department would pursue with its scientific assets.

- **Preventing importation of nuclear weapons and material.** The Department of Homeland Security would make defeating this threat a top priority of its research and development efforts. This nuclear denial program would develop and deploy new technologies and systems for safeguarding nuclear material stockpiles and for detecting the movement of those materials. In particular, it would focus on better detection of illicit nuclear material transport on the open seas, at U.S. ports of entry, and throughout the national transportation system.

- **Detecting bioterrorist attacks.** The anthrax attacks of October 2001 proved that quick recognition of biological terrorism is crucial to saving lives. The Department of Homeland Security would lead efforts to develop, deploy, manage, and maintain a national system for detecting the use of biological agents within the United States. This system would consist of a national public health data surveillance system to monitor public and private databases for indications that a bioterrorist attack has occurred, as well as a sensor network to detect and report the release of bioterrorist pathogens in densely populated areas.

The technologies developed must not only make us safer, but also make our daily lives better. While protecting against the rare event, they should also enhance the commonplace. Thus, the technologies developed for homeland security should fit well within our physical and economic infrastructure, and our national habits. System performance must balance the risks associated with the threat against the impact of false alarms and impediments to our way of life.